



**WS 290A
INTRODUCTION TO THE BIOLOGY OF DIFFERENCE”
SPRING 2011
Banu Subramaniam**

Classes on: Mon & Wed: 11:15-12:05 , Tobin 304
Discussions, Friday 11:15-12:05 & 12:20-1:10 p.m.
Office Hours: M, W: 2-3; and by appointment, Bartlett 231
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I. COURSE DESCRIPTION

How do we account for the many similarities and differences within and between human populations? Axes of human “difference”— sex, gender, race, class, sexuality, religion, nationality etc. – have profound consequences. These differences shape not only group affiliation and identity but are often correlated with colonial and national histories, with organization of societies such as socioeconomic status, professions, work mobility, as well as stereotypes about personal traits and behaviors. Debates around questions of nature and nurture have raged on for several centuries. The biological sciences have been very important in the history of differences. Scientists have contributed to bolster claims that differences are determined by our biology – such as research on sex and racial differences, notions of the “gay” gene, math abilities, spatial ability etc. Conversely, scientists have also contributed to critiquing claims of difference – claims of the existence of “race” and racial differences, claims about differences amongst sexes, genders and sexualities. How do we weigh these claims and counterclaims?

In this course, we will explore both popular and academic writings - their understandings, debates and critiques of “difference.” We examine these categories systematically to evaluate claims of difference. We will begin with a historical overview of biological studies on “difference” to trace the differing understandings of the “body” and the relationship of the body with identity, behavior and intellectual and social capacity. We will then examine contemporary knowledge on differences of sex, gender, race, class, and sexuality. We will use several case studies to explore how scientific and experimental knowledge is produced. What is good data? How do we “know” what we know? The course will take up a range of claims about difference, their purpose and their consequences to examine what these studies of “difference” can tell us – exploring both what they tell us and what they do not. Using literature from biology, women’s studies, and science studies, we will examine the biological and cultural contexts for our understanding of “difference.” The course will give students the tools to analyze scientific studies, to understand the relationship of nature and culture, science and society, biology and politics.

II. COURSE READINGS

Middlesex, by Jeffrey Eugenides, Picador, 2007, Available at *Food for Thought Books, North Pleasant Street, Amherst*

E-Reserves: Articles available online through library [electronic reserves](#). Enter —Subramaniam as instructor or Womensst290A in listed courses and enter the password: biology

SPARK: We will use SPARK throughout the course. Surprise extra credit assignments, news and information and discussion questions will be posted on SPARK throughout the course. Once you register for the course, you will automatically be added to the course on SPARK. You will use your OIT

username and password to sign into the course SPARK and access course information. Please contact OIT if you have any problems. Every student needs to be familiar with the site and check it regularly (<https://spark.oit.umass.edu/webct/entryPageIns.dowebct>). **Many important announcements and assignments will be posted there and you are responsible for this information.**

III. COURSE REQUIREMENTS

- You must be registered for both the lecture and discussion section. Attendance at BOTH is required and mandatory.
- Reading assignments must be completed by the class period for which they were assigned.
- You are responsible for knowing when assignments are due and handing them in on time. Dates of major writing assignments are in this syllabus. But other assignments will be given in your discussion sections. Absence from these sections on the day the assignment is due is no excuse for not handing in the assignment on time. It is each student's responsibility to find out about assignments from someone in your discussion group or from your Teaching Assistant.
- For an absence to count as excused, you must submit an official certification as well as a 2-page summary on the week's readings.
- Discussion sections will provide the opportunity to talk critically and analyze issues and topics. You will be expected to have completed and thought about all of the readings for each class.
- Videos and guest lectures are part of the class material and students are responsible for knowing the material.

We will follow all university policies on issues of Academic Honesty, Grading, Attendance, Examinations, and Absences due to Religious Observance.

Written Assignments and Exams

- **Midterm Exam:** One midterm exam on March 11 in discussion section
- **Two short exercises/writing assignments** (3-4 pages) due Feb 18 and April 1 in discussion section
- **News clippings:** This course deals with materials that are very relevant to our times. We encourage you to bring newspaper articles/clippings, stories for the news program, radio and television programs, the movies as well as conversations with friends and family. We will begin each class with such connections. You should post these on the discussion board on SPARK. During the semester each student must present *at least 2* relevant links before the midterm and two after the midterm. In addition you should comment on someone else's posting at least twice before and after
- **Final project:** A final project and presentation (Topic due March 4, Outline, April 8, Paper- May 2)
- **Discussion groups** are integral part of the class. **Attendance and participation in discussion sections** are factored into the final grade. Two unexcused absences or more will result in your grade being marked down. Non-attendance will result in an "F." If you have an excused absence, you must submit a two-page reflection paper based on the readings assigned for that week. The paper is due the next class day.
- **Extra Credit Events:** Throughout the semester we will post extra credit events. Attend an event and write a 1-2 page summary of the event for 2% extra credit.

Grading

Final grades will be computed as follows:

Discussion section (attendance and participation)	20%
Midterm Exam	20%
Final Project and Presentation	20%
Written assignments (2 assignments- 15% each)	30%
Online Discussion board (5% posting; 5% comment)	10%
Extra Credit (2% per event)	<i>Upto</i> 6%

Discussion Sections

Discussions sections on Friday are not optional or add-ons. They are designed to be an integral part of the course and to provide an opportunity to clarify issues in your readings, films and lectures. We expect you to have *completed and thought about* all of the readings for that week and to be ready to engage in meaningful dialogue. In addition to their strictly academic function, sections are also places where students may talk about the ways in which the topics we address in this course may have touched their lives. **Attendance and participation in discussion groups will be 20% of the course grade.**

Academic Honesty

Academic dishonesty, in any form, will not be tolerated and you are responsible for educating yourself about the University's official policy on academic honesty. Following is a summary - you can read it in full at http://www.umass.edu/dean_students/rights/acad_honest.htm

If an instructor finds that a student has violated the University's Academic Honesty Policy, the instructor has the right to lower the student's grade, or even to fail the student for the course. Students have the right to appeal such a grade penalty by an instructor. The University Academic Honesty Board, which must be notified by instructors of any grade penalty, reviews all student appeals. The Board may sustain or recommend modification of the penalty given by the faculty member, or may recommend sanctions exceeding those originally given, such as suspension or expulsion from the University. The Board may also recommend sanctions for offenders who have committed multiple violations of the Academic Honesty Policy but who have not appealed the faculty members' decisions.

Accommodation Policy Statement

The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), Learning Disabilities Support Services (LDSS), or Psychological Disabilities Services (PDS), you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester so that we may make appropriate arrangements.

http://www.umass.edu/senate/guide/GRAD_COUNCIL_COURSE_APPROVAL_GUIDE.pdf

Ground Rules

Despite the size of this class, we are concerned about the quality of your experience. To that end, we will try to foster as much active participation in the course as is possible. Lectures will include time for questions as they arise, and discussion sections have been designed to continue the dialogue. Make use of office hours to continue class discussions, clarify confusions or to discuss any other problems you are having with the course. Because of the class size and the nature of the subject matter, it is necessary to set some ground rules:

- This class is **50 minutes** and we expect you to remain for the entire period. Late comers and those who begin to pack 5 minutes before the class period disrupt the class for everyone.
- Make up exams will only be given to students who have an exam conflict, a medical or unavoidable excuse. Ignorance of this rule will not constitute a valid excuse.

IV: SCHEDULE

Week 1: Introduction and Background

Wednesday, January 19:

- [Web] Gloria Steinem, "If Men Could Menstruate." *Ms. Magazine*, October 1978 (handout)
<http://www.haverford.edu/psych/ddavis/p109g/steinem.menstruate.html>
- [E-Reserves] Lois Gould, "X: A Fabulous Child's Story," In *Women's voices, Feminist Visions*, Susan M. Shaw and Janet Lee, eds. Mayfield 2001. 119-121

Week 2: Difference: Why? What? How? Who?

Monday, January 24:

- [E-Reserves] Lynda Birke, "In Pursuit of Difference: Scientific Studies of Women and Men," In *Gender and Science Reader*, Muriel Lederman and Ingrid Bartsch eds., Routledge, 2001, 309-322.
- [E-Reserves] Maxine Baca Zinn and Bonnie Thornton Dill, "Theorizing Difference from Multiracial Feminism" In *Through the Prism of Difference*, Allyn and Bacon, 1997, 23-29.
- [E-Reserves] Sandra Bem "Transforming the Debate on Sexual Inequality: From Biological Difference to Institutionalized Androcentrism," In *Lectures on the Psychology of Women*, Joan C. Chrisler, Carla Golden, Patricia D. Rozee eds., Mc-Graw Hill, 3rd edition, 3-15.

Wednesday, January 26:

- [E-Reserves] Teresa L. Amott & Julie A. Matthaei, "Race, Class, Gender and Women's Works: A Conceptual Framework" in *Race, Gender and Work: A Multi-cultural Economic History of Women in the United States.*, Teresa Amott & Julie Mattaei eds., 1996, Boston: South End Press. 11-28.
- [E-Reserves] Audre Lorde, "Age, Race, Class, and Sex: Women Redefining Difference," In *Sister Outsider*, The Crossing Press, 1984, 114-123.
- [Web] Anne Fausto-Sterling, "The Five Sexes: Why males and females are not enough." *The Sciences* 33(2): 20-25, 1994: <http://www.neiu.edu/~lsfuller/fivesexes.htm>
- [Web] Anne Fausto-Sterling, "The Five Sexes Revisited" *The Sciences*, Jul/Aug2000: <http://www.neiu.edu/~lsfuller/5sexesrevisited.htm>

Week 3: Binaries/Dualisms: Nature/Culture, Science/Society, Biological/Social

Monday, January 31:

- [E-Reserves] Anne Fausto Sterling, "Dueling Dualisms," In *Sexing the Body: Gender Politics and the Construction of Sexuality*, Basic Books (November 22, 2000), 1-29.
- [SPARK] Jonathan Marks, "Race: Past, Present, Future," In *Revisiting Race in a Genomic Era*, Barbara Koenig, Sandra Soo-Jin Lee and Sarah Richardson eds., Rutgers Univ. Press 2008: 21-38.

Wednesday, February 2:

- [Web]: Eugenics Archive: <http://www.eugenicsarchive.org/eugenics/>
- [Web] Jonathan Marks, "A Feckless Quest for the Basketball Gene," NYT, April 8, 2000
<http://www.uncc.edu/jmarks/pubs/feckless.html>
- [E-Reserves] Jonathan Kahn, "Ethnic Drugs," In Ronald Munson's *Intervention and Reflection: Basic Issues in Medical Ethics*, 8th edition, 2008: 241-42.

Week 4: Biological Determinism/Social Constructionism

Monday, February 7:

- [SPARK] Lisa Eliot, "Under the Pink or Blue Blankie," In *Pink Brain, Blue Brain*, Mariner 2009, 55-102

Wednesday, February 9:

- [E-Reserves] Ruth Bleier, "Sociobiology, Biological Determinism and Human Behavior," In *Science and Gender: A Critique of Biology and Its Theories on Women*, Pergamon Press, 1984, 15-48.
- [SPARK] Kimberley Tallbear, "DNA, Blood, and Racializing the Tribe," *Wicazo Sa Review*, Volume 18, Number 1, Spring 2003, pp. 81-107

Week 5: Good Science/Bad Science?

Monday, February 14:

- [E-Reserves] National Academy of Sciences, "Methods and Values in Science", In *Racial Economy of Science*, Sandra Harding ed., Indiana University Press, 1993.
- [SPARK] Cordelia Fine, "Delusions of Gender: How Our Minds, Society and Neurosexism Create Difference," Norton, 2010: 3-39

Wednesday, February 16:

- [E-Reserves] Richard Lewontin, "Parts and Wholes: Causes and Effects." In *The Triple Helix: Gene, Organism and Environment*, Harvard University Press, 2001.
- [E-Reserves] Ruth Hubbard, "Science, Facts and Feminism," In *Women, Science and Technology*, Mary Wyer et al eds., Routledge, 2001, 153-160.
- [E-Reserves] Garland Allen, "Science Misapplied: The Eugenics Age Revisited." *Technology Review* 29, Aug/Sep 1996.

Friday, February 18: Writing Assignment 1 due

Week 6: Intersectionality: Race, Gender, Race, Class, Sexuality, Nation

Monday, February 21– Columbus Day – HOLIDAY

Tuesday, February 22:

- [E-Reserves] Patricia Hill Collins, "Toward a New Vision: Race, Class, and Gender as Categories of Analysis and Connection," In *Women's voices, Feminist Visions*, Susan M. Shaw and Janet Lee, eds. Mayfield 2001., 119-121.
- [E-Reserves] Michael Omi and Howard Winant, "Racial Formation," In *Racial Formation in the United States: From the 1960's to 1990's*. Routledge, 1994., 53-76.
- [E-Reserves] Anne Fausto Sterling, "Gender, Race, and Nation." In *Deviant Bodies*, Jennifer Terry and Jacqueline Urla eds., Indiana University Press, 1995, 19- 42.
- "Finally Buried With Honor in Her Native Land." *New York Times*, August 10, 2002.

Wednesday, February 23:

- [E-Reserves] Alice Dreger, "Sex Typing in Sport," *Hastings Center Report* 40, no. 2 (2010): 22-24.
- [SPARK] Michael Kenny, A Question of Blood, Race, and Politics, *Journal of the History of Medicine and Allied Sciences*, Volume 61, Number 4, October 2006, 456-491.

Week 7: The Body: Our Changing Conceptions – General Frameworks

Monday, February 28:

- [E-Reserves] Gerald Tortora and Sandra Grabowski, “An Introduction to the Human Body,” In *Principles of Anatomy and Physiology*, 10th ed., John Wiley & Sons, 2003. 1-11.
- [E-Reserves] Londa Schiebinger, “The Anatomy of Difference: Fixing Racial and Sexual Types.” In *Nature’s Body: Gender in the Making of Modern Science*, Beacon Press, 1993. 115-142.
- [E-Reserves] George W. Stocking, “The Turn-of-the-Century Concept of Race,” *Modernism/Modernity* 1.1, 1994, 4-16.

Wednesday, March 2:

- [E-Reserves] Nancy Leys Stepan, “Race and Gender: The Role of Analogy in Science.” *The Racial Economy of Science: Toward A Democratic Future*. Indiana Univ. Press, 1993. 359-376.
- [E-Reserves] Jennifer Terry, “Modernity and the Vexing Presence of Homosexuals,” In *An American Obsession: Science, Medicine and Homosexuality in Modern Society*, Chicago UP, 27-39.

Resource: http://www.pbs.org/race/000_General/000_00-Home.htm

Friday, March 4 – Topic for Final Project is due

Week 8: Sexualities

Monday, March 7:

- [E-Reserves] Gerard Tortora and Sandra Grabowski, “Reproductive System,” *Principles of Anatomy and Physiology*, Wiley, 2003: 1028-1046.
- [SPARK] Alice Dreger and April Herndon, “Progress and Politics in the Intersex Rights Movement: Feminist Theory in Action,” *GLQ: A Journal of Lesbian and Gay Studies*, Volume 15, Number 2, 2009, pp. 199-224

Wednesday, March 9:

- Film, *Is It a Boy or a Girl?*

Friday, March 11 - Midterm Exam (material up to March 4)

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Week 9: Middlesex

Monday, March 21: Discussion of the novel *Middlesex*

Wednesday, March 23: Discussion of *Middlesex* continued.

[SPARK] James Schiff, “A Conversation with Jeffrey Eugenides,” *The Missouri Review*, Volume 29, Number 3, Fall 2006, pp. 100-119

[SPARK] Debra Shostak, “Theory Uncompromised by Practicality”: Hybridity in Jeffrey Eugenides’ *Middlesex*, *Contemporary Literature*, Volume 49, Number 3, Fall 2008, pp. 383-412

Week 10: Changing Conceptions of the Body: Brain

Monday, March 27:

- [E-Reserves] Gerald Tortora and Sandra Grabowski, "Brain," In *Principles of Anatomy and Physiology*, 10th ed., John Wiley & Sons, 2003. 452-457. .
- [SPARK] Rebecca Jordan Young, "Making Sense of Brain Organization Studies," In *Brain Storm: The Flaws in the Science of Sex Differences*, Harvard University Press, 2010: 41-64.
- [Web] Stephen Jay Gould, "The Geometer of Race," *Discover*, November, 1994
<http://www.greeninformation.org/The%20Geometer%20of%20Race.htm>

Wednesday, March 29:

- [E-Reserves] Anne Fausto-Sterling, 1992. "Homosexual Brains" from: "Sex and the Single Brain." Addendum to the Second Edition, *Myths of Gender: Biological Theories About Women and Men*, Rev. Ed. NY: Basic, pp. 245-259.
- [E-Reserves] Stephen Jay Gould, "American Polygeny and Craniometry before Darwin: Blacks and Indians as Separate, Inferior Species," *The Racial Economy of Science: Toward A Democratic Future*. Indiana Univ. Press, 1993. 84-115.

Thursday, March 31, 4pm, Speaker, Rebecca Jordan Young, author of Brain Storms.

Friday, April 1 – Writing Assignment 2 is due

Week 11: Reproduction – Past, Present, Future

Monday, April 4:

- [E-Reserves] Gerard Tortora and Sandra Grabowski, "Reproductive System," *Principles of Anatomy and Physiology*, Wiley, 2003: 1012-1027.
- [E-Reserves] Dorothy Roberts, "Introduction," In *Killing the Black Body: Race, Reproduction, and the Meaning of Liberty*, Pantheon Books, 1997.
- [E-Reserves] Barbara Ehrenreich and Deirdre English, "Science and the Ascent of the Experts," In *For Her Own Good: 150 Years of Expert's Advice to Women*. Anchor Press, 1978: 69-98.

Wednesday, April 6:

- [Web] Ruth Hubbard and Stuart Newman, "Yuppie Eugenics," *Z Mag*, March 2002,
<http://www.zmag.org/ZMag/articles/march02hubbard-newman.htm>
- [E-Reserves] Richard Hayes, "The Science and Politics of Genetically Modified Humans" *World Watch*, July/August 2002, 11-12.
- [E-Reserves] Judith Levine, "What Human Genetic Modification Means for Women," *World Watch*, July/August 2002.
- [SPARK] Silja Samerski, "Genetic Counseling and the Fiction of Choice: Taught Self-Determination as a New Technique of Social Engineering." *Signs*, Vol 32, No 4, 2009: 735-761.

Friday, April 8 – Outline for Final Project is due

Week 12: Genes and Difference

Monday, April 11:

- [E-Reserves] Ruth Hubbard and Elijah Wald, “A Brief Look at Genetics” 39-57 and “Inherited Tendencies: Behaviors.”(108-117.) In *Exploding the Gene Myth*, Beacon Press, 1997.
- [Web] Larry Adelman, “Race and Gene Studies: What Differences Make a Difference?” http://www.pbs.org/race/000_About/002_04-background-01-02.htm

Wednesday, April 13:

- [Web] Richard Lewontin, “The DNA Era,” *GeneWatch: Council for Responsible Genetics*, <http://www.mindfully.org/GE/2003/DNA-Era-Lewontin1jul03.htm>
- [SPARK] Jonathan Dupré, “What Genes Are and Why There Are No Genes for Race,” In *Revisiting Race in a Genomic Era*, Barbara Koenig, Sandra Soo-Jin Lee and Sarah Richardson eds., Rutgers Univ. Press 2008: 39-58.

Week 13 & 14 : Student Presentations

Monday, April 18: Patriot’s Day – HOLIDAY

Wednesday, April 20 & April 25 & April 27

- Presentation of Final Projects

Week 15: Conclusion: What should we do with “difference?”

Monday, May 2:

- [E-Reserves] Philomena Essed and David Theo Goldberg, “Cloning Cultures: the Social Injustices of Sameness,” *Ethnic and Racial Studies*, Vol. 25, No. 6, 2002, 1066-1082.

Final Project is due

